

What is claimed is:

1. A drive for transferring sideward motion from a first elongate sickle cutting knife on a header of an agricultural combine to a second elongate sickle knife on the header, the sickle knives being mounted in substantially longitudinally aligned relation along a sidewardly extending forward portion of the header for sideward motion relative thereto, the drive comprising:
 - 10 a double rack and pinion arrangement including at least one pinion mounted at a fixed location on the forward portion of the header, a first sidewardly extending rack connected to the first sickle knife for sideward movement therewith enmeshed with the pinion,
 - 15 and a second sidewardly extending rack connected to the second sickle knife for sideward movement therewith enmeshed with the pinion opposite the first rack, such that when the first sickle knife is moved reciprocally sidewardly relative to the header, the first rack will
 - 20 move correspondingly reciprocally sidewardly to reciprocally rotate the pinion so as to reciprocally sidewardly move the second rack and the second sickle knife oppositely to the reciprocal sideward movement of the first rack and the first sickle knife.
- 25 2. The drive of claim 1, wherein the first rack is connected to the first sickle knife by an elongate sidewardly extending first element and the second rack is connected to the second sickle knife by an elongate sidewardly extending second element, the first and second elements being substantially longitudinally aligned.
- 30 3. The drive of claim 2, wherein the drive is contained in a sidewardly extending housing and the

racks are supported, respectively, for side to side movement within the housing by linear bearings.

4. The drive of claim 1, wherein the drive
5 is contained in a housing disposed at least partially above the sickle knives and the racks are connected to the knives, respectively, by elements which extend through openings in a bottom of the housing.

10 5. The drive of claim 1, wherein the sickle knives include longitudinal ends disposed one above the other for relative reciprocal movement.

15 6. The drive of claim 1, comprising two of the pinions.

7. A reversing transfer drive for an elongate driven sickle knife extending in end-to-end relation to an elongate driving sickle knife for reciprocally driving the driven sickle knife transversely along a forward end of a header of an agricultural combine as the driving sickle knife is reciprocally driven transversely along the forward end of the header, for severing crops to be inducted by the header as the combine is moved forwardly over a field, the reversing transfer drive comprising:

a double rack and pinion arrangement including spaced transversely extending driving and driven racks and at least one pinion gear supported for rotation in the space between the racks such that movement in a first transverse direction of the driving rack will rotate the pinion gear so as to move the driven rack in a second transverse direction opposite the first transverse direction, and elements connecting the

driving and the driven racks to the driving and driven sickle knives, respectively.

8. The drive of claim 7, wherein the driving
5 rack is connected to the driving sickle knife by an
elongate sidewardly extending input and the driven rack
is connected to the driven sickle knife by an elongate
sidewardly extending output, the input and the output
being substantially longitudinally aligned.

10

9. The drive of claim 8, wherein the drive
is contained in a sidewardly extending housing and the
racks are supported, respectively, for side to side
movement within the housing by linear bearings.

15

10. The drive of claim 7, wherein the drive
is contained in a housing disposed at least partially
above the driving and driven sickle knives and the
driving and driven racks are connected to the driving
20 and driven knives, respectively, by elements which
extend through openings in a bottom of the housing.

11. The drive of claim 7, wherein the sickle
knives include longitudinal ends disposed one above the
25 other for relative reciprocal movement.

12. The drive of claim 7, comprising two of
the pinions.

30

13. Sickle apparatus for a forward end of a
header for an agricultural combine, comprising:
an elongate first sickle knife extending
sidewardly along a first portion of the forward end of
the header for reciprocal sideward movement therealong;

an elongate second sickle knife extending sidewardly along a second portion of the forward end of the header for reciprocal sideward movement therealong in substantially longitudinally aligned end-to-end
5 relation to the first knife; and

a reversing transfer drive including a double rack and pinion arrangement including spaced sidewardly extending first and second racks and at least one pinion supported for rotation between the racks and enmeshed therewith such that movement in a first sideward direction of the first rack will rotate the pinion so as to move the second rack in a second sideward direction opposite the first sideward direction, and elements connecting the first and second racks to the first and
10 second sickle knives, respectively.

15

14. The apparatus of claim 13, wherein the first rack is connected to the first sickle knife by an elongate sidewardly extending input and the second rack
20 is connected to the second sickle knife by an elongate sidewardly extending output, the input and the output being substantially longitudinally aligned.

15. The apparatus of claim 14, wherein the drive is contained in a sidewardly extending housing and the racks are supported, respectively, for side to side movement within the housing by linear bearings.
25

16. The drive of claim 13, wherein the drive
30 is contained in a housing disposed at least partially above the sickle knives and the first and second racks are connected to the first and second knives, respectively, by elements which extend through openings in a bottom of the housing.

17. The drive of claim 13, wherein the sickle knives include longitudinal ends disposed one above the other for relative reciprocal movement.

5 18. The drive of claim 13, comprising two of the pinions.